Poetry realized in nature

Samuel Taylor Coleridge and early nineteenth-century science

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CAMBRIDGE UNIVERSITY PRESS
CAMBRIDGE
LONDON NEW YORK NEW ROCHELLE
MELBOURNE SYDNEY

PUBLISHED BY THE PRESS SYNDICATE OF THE UNIVERSITY OF CAMBRIDGE
The Pitt Building, Trumpington Street, Cambridge, United Kingdom

CAMBRIDGE UNIVERSITY PRESS
The Edinburgh Building, Cambridge CB2 2RU, UK
40 West 20th Street, New York NY 10011–4211, USA
477 Williamstown Road, Port Melbourne, VIC 3207, Australia
Ruiz de Alarcón 13, 28014 Madrid, Spain
Dock House, The Waterfront, Cape Town 8001, South Africa

http://www.cambridge.org

First published 1981
First paperback edition 2002

A catalogue record for this book is available from the British Library

Library of Congress Cataloguing in Publication data
Levere, Trevor Harvey.
Poetry realized in nature.
Includes index.
1. Coleridge, Samuel Taylor, 1772–1834 – Knowledge – Science.
2. Literature and science. 3. Science –
Great Britain – History – 19th century. I. Title.
PR4487.S35L4 821'.7 81-1930 AACR2

ISBN 0 521 23920 6 hardback
ISBN 0 521 52490 3 paperback

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INTRODUCTION

NATURE AND MIND

Samuel Taylor Coleridge, in the organic unity of his thought, worked constantly toward a system reducing "all knowledges into harmony."[1] Thomas McFarland has observed that "the urge to system is a reflection, in the special realm of philosophy, of a universal concern, the need to harmonize, to tie things together – what we may call the need for reticulation."[2] This need impelled Coleridge to attempt to reconcile conflicting systems of thought, and to make room for all facts of experience.

He was determined to construct a scheme that was truly comprehensive, encompassing the reality and dignity of external nature, the moral sense and freedom of will of mankind, and God, in whom man had his being.[3] Faith in this scheme was not irrational, but rather subsisted "in the *synthesis* of the reason and the individual will."[4] Trinitarian Christianity came to provide a unifying logic for this scheme, and that logic in turn supported Christianity, in a mutual interdependence: "True philosophy rather leads to Christianity, than contained anything preclusive of it."[5] Coleridge asserted, indeed, "that it was one of the great purposes of Christianity . . . to rouse and emancipate the soul from . . . debasing slavery to the outward senses, to awaken the mind to the true *criteria* of reality, namely, permanence, power, will manifested in act, and truth operating as life."[6]

Coleridge held fast to the reality of man's moral being and to that of external nature. He would not evade, nor, as McFarland has shown, could he fully resolve this tension. Christianity, trinitarian Christianity, enabled him to retain both poles, the real and the ideal: "That which gives a reality to the idea, that which gives the dignity of the ideal to reality, that which combines all the common sense of the experimental philosopher with all the greatest prospects of the Platonists – that we find in Christianity." The Trinity was the central

unifying idea, "the primary Idea, out of which all other Ideas are evolved."[7]

Plato, poet and philosopher, interfusing thought and feeling, was one whom Coleridge admired and used in working toward the system that would synthesize religion with philosophy, viewing him as one wholly aware of the need for reticulation: "Plato . . . perceived . . . that the knowledge of man by himself was not practicable without the knowledge of other things, or rather that man was that being in whom it pleased God that the consciousness of others' existence should abide, and that therefore without natural philosophy and without the sciences which led to the knowledge of objects without us, man himself would not be man."[8] These were Coleridge's own convictions. Poet, philosopher, critic, and theologian – all were one in the unity of his intellectual enterprise. Science, through its foundation in facts and its informing structure of ideas and laws, related mind to nature, the ideal to the real, and had to be incorporated into his system. Science, in short, was fundamental in Coleridge's thought.

Coleridge, recognizing the creativity inherent in scientific discovery, saw in science a source of imaginative insight. And in interpreting science philosophically, as he had to do in striving for a true system, he drew upon the same philosophical canons that he used in moral philosophy. This took him to authors little regarded by English men of science; consider, for example, the unlearned castigation meted out to the German natural philosopher J. W. Ritter by Humphry Davy, then Coleridge's friend and England's leading scientist: "Ritter's errors as a theorist seem to be derived merely from his indulgence in the peculiar literary taste of his country, where the metaphysical dogmas of Kant which as far as I can learn are pseudo platonism are preferred before the doctrines of Locke and Hartley, excellence and knowledge being rather sought for in the infant than in the adult state of the mind."[9] And Davy in the same lecture condemned Plato for "hiding philosophy in a veil of metaphysical tinsel fitted only to pamper the senses." Such philosophical tastes were representative of those held by leading English scientists contemporary with Coleridge; his ideas about science were accordingly uncongenial to members of the scientific establishment. This establishment has until recently been virtually the exclusive preoccupation of historians of science. There was, however, in the early nineteenth century, a growing concern with exploring the interconnections and interfaces between the sciences; the German tradition of philosophical science was compatible with this unifying enterprise. The subsequent rejection of *Naturphilosophie* was emphatic; Justus von Liebig in the 1840s

condemned it as "the black death of our century." The historiography of science followed the tenor of that rejection, so that we have largely ignored the extent to which German science was permeated by philosophy; we need to recognize the influence of *Naturphilosophie* even on its most influential scientific critics.[10] Coleridge, in working toward his system, drew widely on this alternative tradition. Now, when questions about science and romanticism are receiving attention, when the social history of science is maturing, and when many historians are relaxing an earlier positivism in their definition of science, Coleridge's views about science and his sources in science have a renewed significance.[11] At the same time, Coleridge's writings about science, previously difficult of access, are rapidly becoming available in successive volumes of the *Notebooks* and the *Collected Coleridge*.[12]

The sciences were prominent in Coleridge's earliest educational schemes, valuable in themselves and as an aid to the mind in perceiving relations and grasping ideas, essential parts of the poet's business. Coleridge knew what was needed as preparation for the writing of an epic poem – a grasp in principle and in detail of the knowledge of the ages, the history and frame of man and nature. And then the poet's mind would work upon this knowledge, transmuting it into a unity that mirrored nature through the synthetic and creative power of imagination. Poet, philosopher, and scientist were one in this enterprise. Coleridge saw Shakespeare as a nature humanized, poets as profound metaphysicians, and Humphry Davy's chemistry as poetry realized in nature.

Coleridge was a brilliant observer of the minutiae of nature. He perceived and recorded details, while seeking to comprehend their significance through their interrelations within the web of nature. He had a native ecological sense. At the same time, he saw clearly that relations were mental constructs, and no less real for that. He regarded nature as determined, and even defined it as the chain of cause and effect. This determinism was not mechanical, but dynamic, governed by powers. There were powers of mind and powers in nature, corresponding to one another. This network of correspondences made nature one, and made it intelligible.

In Coleridge's account, the human mind created unity through ideas, whereas nature's unity arose from laws. But there was a sense in which ideas were laws, so that philosophers could move from mind to nature, and scientists could move from nature to mind. The investigations of scientists were thus integral to Coleridge's lifelong inquiry into the rule of the active mind. It is significant that when he came in *The Friend* to illustrate right intellectual method, he did so with ex-

amples drawn from science and from the history of science. His illustrations of genius, the supreme sustained exertion of imagination, came as often from science as from literature. Imagination, for poet and scientist alike, transmuted and unified thought and thing, making mind one with nature. "The *rules* of the *IMAGINATION* are themselves the very powers of growth and production."[13] It follows, as Owen Barfield has remarked, "that anyone who has decided to take Coleridge seriously will be shirking the issue if he fails to consider the relation between what he thought, on the one hand – and 'Science' on the other."[14] What is important here is the way in which Coleridge thought about science, and the role of scientific information in the development of his thought; we concern ourselves with what Coleridge thought about science in order the better to grasp how he thought.

Science was valuable for Coleridge because it revealed and constituted relations in nature. It was the antidote to speculation in philosophy, and he used it accordingly. Philosophy was supported by science, to which it gave structure. "A system of Science *presupposes* – a system of Philosophy"[15] It therefore comes as no surprise to find that in the various drafts and schemes of Coleridge's great work of systematic intellectual synthesis, his unfinished *Opus Maximum*, science enters early and fundamentally. "The Logosophic System and Method . . . first demonstrating the inherent imperfection of all exclusively intellectual . . . or theoretical Systems, . . . proceeds to establish the ~~true~~ proper . . . character and function of Philosophy as the supplement of Science, and the realization of both in Religion or the Life of Faith."[16]

The *Opus Maximum* epitomizes Coleridge's whole intellectual enterprise. There were always plans for the work, which were always in the process of modification, but never came satisfactorily to fruition. There is method in the partial drafts, an articulation of ideas and arguments, a guiding structure; but for all his striving, one is hard put to discover system in them. The "collisions of a hugely developed sense of inner reality with a hugely developed sense of outer reality, with neither sense giving ground," produced an unresolved and, as McFarland has argued, an unresolvable tension between the philosophical traditions of "Platonico-Christo-Kantism on the one hand, and Spinozism, on the other."[17] Coleridge was led to the development of an argument, not the statement of a conclusion. He was frustrated in his attempts to create a system of philosophy; but he philosophized, and sought to teach others to do likewise. Scientific thought furnished an example of intellectual method, and thinking about sci-

ence – what M. H. Abrams has called metascience[18] – was an essential part of Coleridge's critical philosophical and imaginative activity.

I have emphasized the tentative and progressive form of his study of mind and nature, with its incorporation of facts and laws of science. Coleridge, always his own worst advocate, seems to invite criticism for embarking on programs that could not be completed. But there is much in common between his enterprise and the enterprise of science, although the latter has often been conducted by those least patient with philosophizing. It is not merely that both go to nature and to mind in bringing intellectual order to sensory multiplicity and chaos. It is not even that some scientists, like some philosophers, impose their ideas on nature as a step toward finding them in nature. Science, like Coleridge's thought, is progressive, always perceiving and incorporating new facts, new laws and ideas. Science is also tentative, for new discoveries, new concerns, new ways of seeing the natural world, lead to the rejection of old theories, the modification of old laws, and the formulation of new ones. Again, science is always unfinished, partial, and selective. Coleridge, although no scientist, could sympathize with the work of scientists, and so study their writings the more eagerly.

Coleridge's exploration of the sciences and the formulation of his metascience were major components in the articulation and development of his thought. The intensity of his exploration is revealed in extensive evidence, in letters, notebooks, and marginalia, fragments indicative of a far-from-fragmentary intellectual grasp. Beddoes and Blumenbach, Darwin and Davy are prominent in the early years. Coleridge knew them personally and through their works. He studied physiology in Göttingen and chemistry at Davy's lectures at the Royal Institution in London, and he acquired besides a good general grounding in the science and medicine of his day. He contributed directly and indirectly to the lectures of Joseph Henry Green and tackled physiological problems with Dr. James Gillman. German philosophical science fascinated him, and he discussed science with visitors like Friedrich Tiedemann and G. R. Treviranus. He always retained his interest in science. In 1833, one year before his death, he visited Cambridge to attend a meeting of the British Association for the Advancement of Science, characteristically contributing to a debate on the proper title for men of science.

Coleridge's response to intellectual issues was never wholly abstract. Just as nature was his touchstone in metaphysics, so his scientific friends and teachers disciplined and directed his approach to science. He shared their enthusiasms wholeheartedly. Davy's electro-

chemical investigations and his researches in animal chemistry were accordingly of seminal importance for Coleridge.

He was well informed about most of the sciences of his day – more so than most philosophers of science have been before or since, and perhaps uniquely so for a poet. The range and quality of his metascience bespeaks an involvement intense because interdependent with his other commitments in poetry, theology, and criticism. He acquired real familiarity with the theory and factual content of essentially qualitative sciences like physiology, chemistry, and geology. Mathematical physics and astronomy were, however, largely closed to him by his ignorance of mathematics. This imbalance in his knowledge was troublesome to him, for he aimed at a comprehensive account of the sciences as part of his unified encyclopedic study of man and nature and of their relation to God.

He believed that the difficulty could be overcome. He regarded quantitative sciences as essentially analytical, deriving from Newton's physics and Locke's philosophy. His own scheme was to be synthetic, exhibiting relations through polar powers, so that the quantitative aspects of science were of only secondary importance to him. The grand synthesis always escaped him. It was, like final truth in science, unattainable, even had some areas of science not been closed to him. He never published his *Opus Maximum*, although he wrote or dictated several volumes of it. He never wrote a comprehensive philosophy of nature. But for a decade after 1816, he worked steadily toward one. The *Theory of Life*, his most extended metascientific statement, may be seen as a step toward the desired system.

System implies and demands method. Coleridge's method was to seek fundamental relations and correspondence in the light of ideas. His fundamental ideas were the Trinity, and polarity, which he saw as its corollary. Polarity, as Barfield has written, "is dynamic, not abstract. It is not 'a mere balance or compromise,' but 'a living and generative interpenetration' . . . [T]he apprehension of polarity is itself *the basic act of imagination*."[19]

Polarity was the crucial concept in Coleridge's dynamic logic, elaborated in response to his need to reconcile the existence of man's moral nature and the transcendence of God with the reality of external nature. It was part of his trinitarian resolution[20] of the most fundamental problems, reached at the end of his passage from Unitarianism and necessitarianism, always developing and never fully elaborated. This progress took him not only to Kant, whom he was to read until his death, but to F. W. J. von Schelling and Henrik Steffens, who used polarity in an attempt to reconcile subject and object, the self and

nature. Coleridge first accepted their arguments, then perceived the pantheistic implications of a philosophy that made nature absolute. He then moved away from Schelling and Steffens, transcending rather than rejecting them, often preserving their language while redefining crucial terms.

His use of German sources in the years immediately following the composition of the *Biographia Literaria* is as significant in metascience as in other interdependent regions of his thought; here as elsewhere, Coleridge used his sources in ways that demonstrate understanding of the issues they confronted, moving frequently and perceptively beyond them. He used the facts of science, drawn from impeccable researches and reliable compendia, together with the ideas of philosophers, in working toward his own system.[21] His thought about science, developing with his philosophy and theology, can be studied through his changing views of *Naturphilosophie* in the decade after 1815.

Coleridge believed that mind was active in nature, which was itself organic, alive and developing, and intelligible. Here were the foundations for a systematic study. In the years after his move to Highgate, he was in almost daily intercourse with medical men, and became increasingly interested in the activities of the Royal Institution, the Royal Society, the Society for Animal Chemistry, and the Royal College of Surgeons. He pursued a program of scientific reading for several years from 1819. His notebooks reveal a striking constancy of purpose, with methodical attention devoted to some areas of study, especially chemistry. His wide readings in English and German scientific texts broadly followed the hierarchy of the natural sciences that was to be incorporated in the *Opus Maximum.*

Coleridge followed the Bible in moving from chaos through the construction of matter to the construction of the cosmos. The Bible, after all, was "in its own way a mythic and holy book written in symbols that explained creation, nature, God, and man in a poetic language."[22] Coleridge's definition of the primary imagination as "a repetition in the finite mind of the eternal act of creation in the infinite I AM"[23] related creation, God, the self, and nature in a unity that could be explored through the biblical account of creation, illuminating the creation and the order of nature. There could be no conflict between revelation and fact, no temptation toward lying for God. "If Christianity is to be the religion of the world . . . so true must it be that the book of nature and the book of revelation, with the whole history of man as the intermediate link, must be integral and coherent parts of one great work: and the conclusion is, that a scheme of

the Christian faith which does not arise out of, and shoot its beams downward into, the scheme of nature, but stands aloof as an insulated afterthought, must be false or distorted in all its particulars."[24]

Science, philosophy, and religion provided the foundation, with the facts of science at once a perpetual touchstone and the fabric of the edifice. Coleridge, incorporating the latest and surest discoveries of science, moved from cosmology through astronomy, physics, geology, and chemistry to the life sciences. All his scientific reading, his medical gleanings, and his interest in natural history combined with philosophy to give him a theory of life. Coleridge succeeded in his notebooks in constructing an approach to the sciences that welded their parts into a unity, and offered a radical alternative to the scientific orthodoxy of his time. The scheme, unfinished as it is, adds a new dimension to our understanding of Coleridge's thought and of early nineteenth-century science.